

ATOMIC ENERGY CENTRAL SCHOOL -2, MUMBAI
PERIODIC TEST-I (2023-2024)

Class: 8

Mathematics

21.07.2023

General Instructions:

1. This Question Paper has 5 Sections A-E.
2. Section A has 10 MCQs carrying 1 mark each
3. Section B has 3 questions carrying 02 marks each.
4. Section C has 2 questions carrying 03 marks each.
5. Section D has 2 questions carrying 05 marks each.
6. Section E has 2 case based integrated units of assessment (04 marks each) with subparts Of the values of 2 marks each.

Section A

(1x10=10Marks)

1. $\frac{13}{17} + \frac{-9}{15} = \frac{-9}{15} + \frac{13}{17}$ is an example to show that -

- (a) rational numbers are distributive under addition.
- (b) addition of rational numbers is commutative.
- (c) addition of rational numbers is associative.
- (d) rational numbers are closed under addition.

2. What is the measure of each exterior angle of a regular polygon of 15 sides?

- (a) 30°
- (b) 45°
- (c) 60°
- (d) 24°

3. $1 \times \frac{13}{14} = \underline{\hspace{2cm}}$.

- a) 0
- (b) $\frac{13}{14}$
- (c) 14
- (d) 13

4. Solve for x: $\frac{16x-7}{12x+1} = 1$

- a) $\frac{3}{4}$
- (b) 1
- (c) -2
- (d) 2

5. The product of a non-zero rational number and its reciprocal is _____.

- (a) 1
- (b) 2
- (c) 3
- (d) -1

6. If two adjacent angles of a parallelogram are $(5x-5)^\circ$ and $(10x+35)^\circ$, then the ratio of these angles is

- (a) 1:3
- (b) 2:3
- (c) 1:2
- (d) 1:4

7. When the sum of the interior angles of a polygon is 10 right angles, then how many sides does it have?

- (a) 6
- (b) 12
- (c) 8
- (d) 7

8. Select a false statement from those given below:

- (a) A square is a rectangle that has equal adjacent sides.
- (b) A square is a rhombus whose one angle is a right angle.
- (c) The diagonals of a square bisect each other at right angles.
- (d) The diagonals of a square do not divide the whole square into four equal parts.

9. If $\frac{5x}{3} - 4 = \frac{2x}{5}$, then the numerical value of $2x - 7$ is

- (a) 19/13
- (b) -13/19
- (c) 0
- (d) 13/19

10. If $5x - 3 = 25 + 17x$, then x is _____.

- (a) a fraction
- (b) an integer
- (c) a rational number
- (d) cannot be solved

SECTION – B

(2 x 3 = 6M)

11. Find $\frac{-2}{3} \times \frac{7}{10} + \frac{5}{4} - \frac{(-7)}{10} \times \frac{1}{6}$ using distributive property.

12. Solve the equation:- $3x + \frac{2}{3} = 2x + 1$

13. The measures of the two adjacent angles of a parallelogram are in the given ratio 3: 2.

Find the measure of all the angles of the parallelogram.

SECTION – C

(3 x 2 = 6M)

14. Verify that $x \times (y + z) = (x \times y) + (x \times z)$. Taking $x = \frac{-3}{4}$, $y = \frac{2}{3}$ and $z = \frac{4}{5}$,

15. In a quadrilateral ABCD, $\angle D$ is equal to 150° and $\angle A = \angle B = \angle C$. Find $\angle A$, $\angle B$ and $\angle C$.

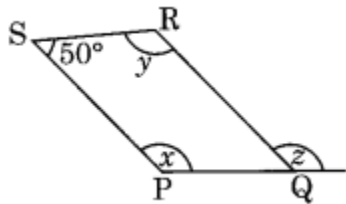
SECTION – D

(5 x 2 = 10M)

16. Solve:- (i) $\frac{3x+4}{2x-7} = \frac{19}{3}$ (2 ½m)

(ii) $\frac{-7}{15}x + \frac{22}{15}x = -2x + 15$ (2 ½m)

17. (i) PQRS is a parallelogram. Find the values of the unknowns x, y and z. (3m)



(ii) Name the quadrilaterals,

(a) which have their diagonal perpendicular to each other?

(b) which have equal diagonals?

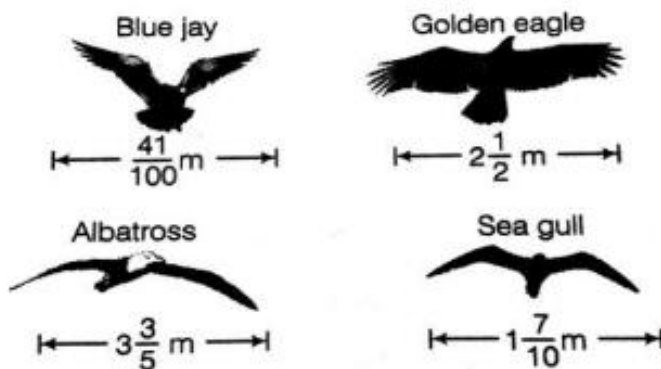
(2m)

SECTION – E

(4 x 2 = 8M)

18. Case Study 1

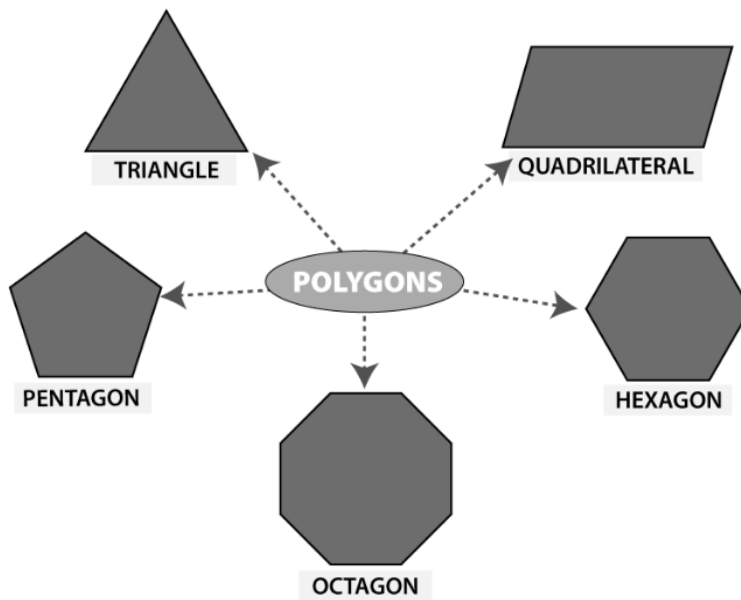
The diagram shows the wingspans of different species of birds. Use the diagram to answer the question given below.



(i) How much longer is the wingspan of a Golden eagle than the wingspan of a Blue jay ? (2m)

(ii) How much longer is the wingspan of a Albatross than the wingspan of a Seagull ? (2m)

19. Case Study 2 Polygons are two dimensional geometrical figures that are formed with line segments. Since there are more than 2 line segments, a polygon has a vertex, which is the point that is obtained at the junction of line segments. There is a line segment and vertex, which results in an angle.



(i) Calculate the sum of all interior angles of a polygon having

(a) 10 side

(b) 7 sides

(2m)

(ii) Is it possible to have a polygon, where the sum of whose interior angles is 9 right angles?

(2m)